

for fowls, which fact would necessitate fencing off a piece of the infected land for separating the young stock from the old infected ones. Such a procedure would involve the disinfecting of land and buildings. Buildings could be readily cleansed by some of the creolin preparations already employed against mites, but the disinfection of extensive areas of land offers a more serious, but by no means insurmountable, obstacle. Sunlight can be depended upon in time to kill the tubercle bacilli in the surface layers of the soil, but just how quickly this can be accomplished remains to be determined.

It is believed that the spread of the disease among flocks of diseased fowls might be lessened by weeding out all hens that are poor and have pale combs. These might be kept in a separate enclosure until their gradual decline or recovery decides the question whether or not they are diseased.

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THE DUCTLESS GLANDS.*

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THE ductless or vascular glands elaborate materials which produce through the circulatory system definite influences over remote parts. Some of these chemical materials are highly antitoxic and necessary for the preservation of life. Thyroid medicinally given internally, produces increased activity of combustion throughout the body, and in certain conditions much loss of weight. Myxedema gives an example of increased metabolism when thyroid gland is given. This increase of metabolism does not occur, however, in all who take it. The best effect is where there is a condition of obesity with myxedema. Thyroid extract has been administered successfully in myxedema, which is due to absent or inactive thyroid, characterized by lowered temperature, impaired intellect, memory and speech, skin thick and dry, with shedding of epithelium. Under thyroid treatment myxedema patients soon improve. The normal temperature returns, intelligence, memory and speech are restored and thickening of the skin disappears; which return when the remedy is stopped. Cretinism is congenital myxedema, and has improved under thyroid treatment, but returns with suspension of treatment.

Thyroid gland given in cretinism is very active, and the patient becomes reduced in size at

first by loss of unhealthy fat. There is increased appetite and improved digestion, then gain in weight, in healthy, firm tissues, soft moist skin the gradual improvement of brain tissue and mind. Simple goitre is often greatly benefited or cured by thyroid treatment. In many skin diseases it also has given good results and it has been recommended for many other diseases. Symptoms of thyreoiditis are tachycardia, depression, glycosuria, albuminuria, exophthalmos and irritability. Thyreoid is contra-indicated in tuberculosis and heart disease.

Very little is known of the function of the spleen. The substance of the spleen has been used in various disorders of the blood, the idea being to supply to the tissues some material necessary to health. Serious improvement of its functions by disease is usually followed by tissue change and changes in temperature. It secretes some bactericide which is indicated by enlargement of the organ in many acute and infectious diseases, as though working against the germs of disease. The use of the spleen in medicine was suggested by that organ's enlarging in some cases of cretinism and myxedema. In medicine it has been found to aid digestion and nutrition and increase the cutaneous circulation. It gives rise to increased number of red corpuscles, and has proved of benefit in anaemia, also in typhoid fever by producing leukocytosis. It steadily reduces the temperature and is said to quickly restore the patient to normal condition.

Disease of the suprarenal gland is followed by progressive asthenia, bronzing of the skin, loss of digestive power and vomiting. Destruction of these organs is thought capable of causing an accumulation of toxic agents, which is the principal cause of fatigue and general asthenia of patients suffering from Addison's disease. Diseased glands from Addison's disease have been found to be inert. The suprarenal secretion has remarkable physiological properties, and is a local astringent or constrictor and cardiac stimulant. It reduces congestion and hastens the absorption of inflammatory tissue. It has given good results in Addison's disease and in exophthalmic goitre. It lessens the heart beats and decreases the size of the thyroid gland. A toxic substance has been isolated from the suprarenals which is identical with muscle poisons originating in the muscles. a substance foreign to the suprarenal capsules. These organs appear to have the destruction of toxic products as a function.

The thymus gland is active only during the first two or three years of life during rapid development, after which it becomes atrophied. Its physiological action appears to be similar to that of the thyroid gland, except that it is weaker.

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